

OPERATORS MANUAL

MDC-2

Connectivity Engine



INCLUDES MDA-1

Care Aware Connection

 **CERNER**
All Together™

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MDC-2

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User Responsibility

This product will perform in conformity with the description thereof contained in this Operation Manual and accompanying labels and/or inserts, when assembled, operated, maintained and repaired in accordance with the instructions provided. This product must be checked periodically. A defective Product should not be used. Parts that are broken, missing, plainly worn, distorted or contaminated should be replaced immediately. This product or any of its parts should not be repaired other than by Cerner authorized service personnel. The product must not be altered without the prior written approval of Cerner. The user of this Product shall have the sole responsibility for any malfunction, which results from improper use, faulty maintenance, improper repair, damage or alteration by anyone other than Cerner or Cerner authorized providers.

User is responsible for using the correct power line cord for the country where the MDC-2 is being used.



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INTRODUCTION

This manual provides information on the correct use of the Connectivity Engine (MDC-2). It is up to the user to ensure that any applicable regulations regarding installation and operation of the MDC-2 are observed, and the proper power line cord is used (if different than the North American cord supplied).

Manufacturer's Responsibility

The manufacturer of this equipment is responsible for the effects on safety, reliability, and performance of the equipment only if:

- Assembly operations, adjustments, or repairs are carried out by persons authorized by the manufacturer
- The electrical installation complies with all applicable regulations
- The equipment is used in accordance with the instructions in this manual

Incorrect operation or failure of the user to maintain the MDC-2 in accordance with proper maintenance procedures relieves the manufacturer or his agent from all responsibility for consequent non-compliance, damage, or injury.

This manual explains how to use the MDC-2 and MDA-1. Important safety information is located throughout the manual where appropriate. **READ THE ENTIRE SAFETY INFORMATION SECTION BEFORE USING THE MDC-2.**

Disposal

Disposal of devices or consumables must be done in accordance with local, state, and federal laws and regulations.

WEEE Directive 2002/96/EC.- Do not dispose of WEEE products in general waste. At the end of life of product contact Cerner Corporation for return instructions.

SAFETY

Electrical

The MDC-2 is intended to be operated from a mains power source of nominally 100 to 230V~, 47 to 63 Hz and Maximum AC Power consumption: 145 VA.



Warning: The Cerner Connectivity Engine (MDC-2) is only approved for use with a Cerner Medical Device Adapter (MDA-1).



WARNING: To prevent electrical hazards to all personnel, this device must be properly grounded. Connect the device only to a three-wire, grounded, hospital grade receptacle. The three-conductor plug must be inserted into a properly wired three-wire receptacle; if a three-wire receptacle is not available, a qualified electrician must install one in accordance with the governing electric code.



WARNING: Do not under any circumstances remove grounding conductor from the power plug.



WARNING: The hospital-grade power cable supplied with this equipment provides for this protection. Do not attempt to defeat this protection by modifying the cable or by using ungrounded adapters or extension cables. The power cord and plug must be intact and undamaged. It is the user's responsibility to use the proper power cord for the country where the MDC-2 is being used.



WARNING: Do not connect to an electrical outlet controlled by a wall switch or dimmer.



WARNING: If there is any doubt about the integrity of the protective ground conductor arrangement, do not operate the MDC-2 until the AC power source protective conductor is fully functional.



WARNING: Do not place the MDC-2 in any position that may cause it to fall on the patient. Do not lift the MDC-2 by the power supply cord or other cables.



WARNING: Electric shock hazard! Do not remove covers or panels. Refer service to qualified service personnel.



WARNING: To avoid electrical shock, disconnect the MDC-2 from its power source before changing fuses. Replace fuses only with same type and rating T1.6A 250V (Metric 5x20mm).



WARNING: Do not clean MDC-2 while it is on and/or plugged into a power source.



WARNING: If unit is accidentally wet, discontinue use until dry and then test unit for proper operation before reuse on a patient.



WARNING: When attached to other devices, insure that the total chassis leakage currents of all units do not exceed 300 μ A.



CAUTION: The MDC-2 is to be used on a flat surface only.



CAUTION: The use of Accessory equipment not complying with the equivalent safety requirement of this equipment may lead to a reduced level of safety of the resulting system. Consideration relating to the choice shall include;

- Use of the Accessory in the patient vicinity.
- Evidence that the safety certification of the Accessory has been performed in accordance to the appropriate IEC 60601-1 and/or IEC 60601-1-1 harmonized national standard.



Explosion

DANGER: Explosion hazard! Do not use this equipment in the presence of flammable anesthetics or other flammable substance in combination with air, oxygen-enriched environment or nitrous oxide.

EMC

This equipment has been certified to be protected to emissions and immunity according to the EMC and R&TTE Directives.



WARNING: In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Radio Communication

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

It has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will

be required to correct the interference at his or her own expense. It operates on a non-interference basis with other devices operating at this frequency. Any change or modification not expressly approved by Cardiopulmonary Corp. could void the user's authority to operate the device.

This device also meets the requirements of the Canadian Interference-Causing Equipment Regulations. Cet appareil numérique de la Classe A respecte toutes les exigences du Règlement sur le Matériel Brouilleur du Canada.

Description of Warning Labels



Attention, consult ACCOMPANYING DOCUMENTS. Equipment connected should comply with UL-60601-1 or IEC-950 with configuration to IEC-60601-1-1.



Fuse type/rating.



Mains Power On



Mains Power Off



Protective earth (ground)



Functional Ground



WEEE Compliance



CE mark



ETL Designation: Conforms to UL STD. 60606-01

DESCRIPTION

The Connectivity Engine (MDC-2) and Medical Device Adaptor (MDA-1) enable data transfer from a medical device to the Hospital Information System (HIS). The MDC-2 provides a 3.5” LCD QVGA color touchscreen display. The display screen is used to indicate device link status, and network link status. The MDC-2 communicates to the HIS via a 10/100 physical network connection or wirelessly using an 802.11 a/b/g compliant radio. The MDC-2 will be located within 5 meters/16.4 feet of any fixed or portable medical device. The MDC-2 is capable of connecting up to eight medical devices using USB cabling to the MDA-1 connector. The MDA-1 is powered through the USB connection to the MDC-2. The MDA-1 is mounted to the medical device and electrically connected to the medical device serial port.

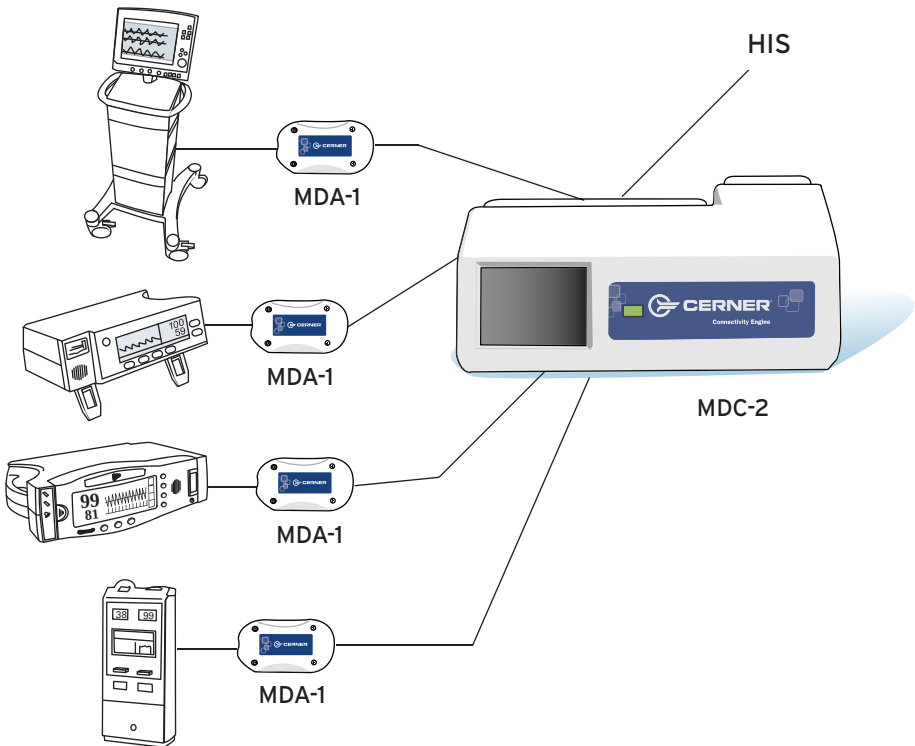


CAUTION: The MDC-2 is to be used on a flat surface only.

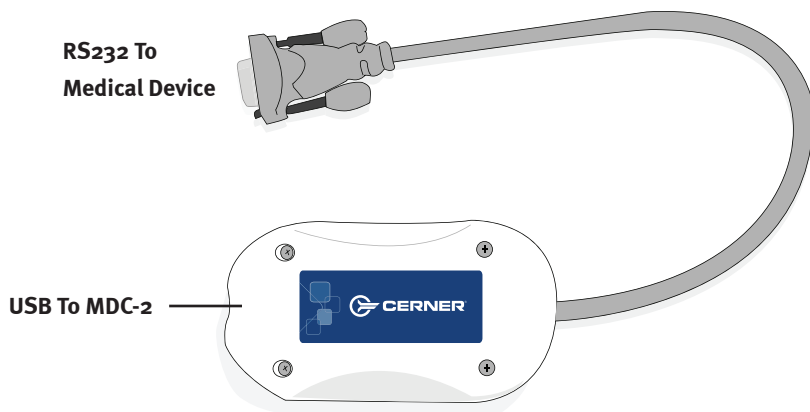
Safety Approved (in accordance with UL-60601-1 2nd edition)

Degree of protection against ingress of water:	IPX0
Methods of Maintenance and Cleaning:	No sterilization or disinfecting required. See page 14
Degree of safety of application:	Equipment not suitable for use in the presence of a flammable anesthetic mixture with air, or with oxygen or nitrous oxide.
Mode of operation:	Continuous

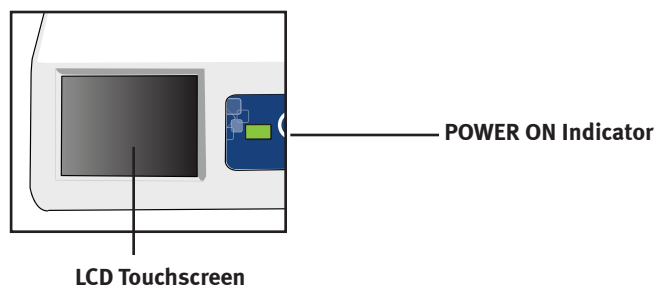
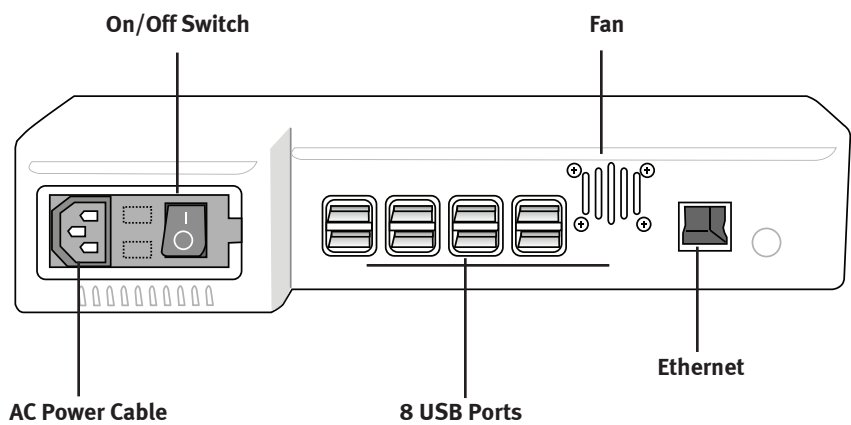
System Overview



Special Cables

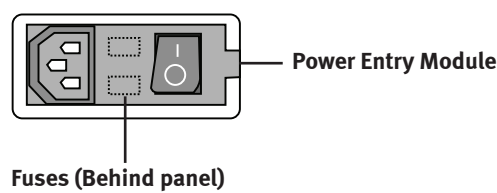


Description of Features



Fuse Ratings

The fuses are located behind the cover of the power entry module. To replace the fuses, remove the cover and replace them only with same type and rating T1.6A 250V (Metric 5x20mm).



Installation/Operating Instructions

Installation

Open the box and verify all accessories are available.

Parts supplied with the MDC-2:

- MDC-2 Unit
- Hospital Grade Power Supply Cord (North American)
- Operators Manual

Insert the power cord into the Power Entry module on the rear panel of the MDC-2. Plug the other end into a hospital grade receptacle.

Turning on the System

Locate the Power button on the rear panel of the MDC-2. Turn it on. The boot up sequence may take up to approximately 60 seconds. The system is ready to use once the WindowsCE® and Bernoulli® splash screens disappear, and the Cerner logo screen appears.

Connecting MDA-1 to a Medical Device

Connect the RS232 serial cable from the MDA-1 to a supported medical device. Refer to your Healthcare Information Technology Systems provider for a supported list of devices.

Connecting MDA-1 to MDC-2

Connect the USB cable from the MDA-1 to one of the eight ports on the rear panel of the MDC-2. Note the MDC-2 must be placed on a flat surface.

SPECIFICATIONS MDC-2

Communications

- Eight external USB Type A connectors (or similar)
- One external RJ45 10/100 port
- One internal SD card adapter for non-volatile memory expansion, up to 4GB

Mechanical

- Size: Height: 2.5in. (6.2cm) , Width: 7.5in. (18.75cm), Depth: 5.5in. (13.75cm)
- Weight: <2.5 lbs (< 1.2kg)

Environmental

- Operating Temperature Range: 32-104°F
- Operating Humidity Range: 10% - 90% non-condensing
- Storage Temperature Range: -20°C to 40°C
- Relative Humidity: 0% - 90% non-condensing
- Atmospheric Pressure: 500-1060 mbar

Power Requirements

- Voltage Input: 100-230 VAC, 47/63 Hz, without manual switching
- Maximum AC Power Consumption: 145 VA

Regulatory

- Unit meets or exceeds the specifications and regulations for:
 - o UL60601-1 (2003) 1st edition
 - o EMC Directive (2004/108/EC):
 - EN 55022:2006
 - EN 55024:1998, A1:2001, A2:2002
 - EN 61000-3-2:2005
 - EN 61000-3-3:1995, A1:2001, A2:2005
 - o R&TTE Directive (1999/05/EC):
 - ETSI EN 301 489-1 v1.7.1
 - ETSI EN 301 489-17 v1.2.1
 - o FCC and IC:
 - FCC Part 15b (47 CFR Part 15b), 2005
 - RSS-210
 - o CAN/CSA C22.2 No 601.1-M90
 - o CE mark

MAINTENANCE AND CLEANING

When necessary, clean the exterior surfaces of the device with a cloth or swab dampened with a warm water and mild detergent solution. Do not allow liquids to enter the interior of the instrument.

CAUTION:

- Do not autoclave, pressure sterilize, or gas sterilize the unit.
- Do not soak or immerse in any liquid.
- Use cleaning solution sparingly. Excessive solution can flow into the unit and cause damage to internal components.
- Do not touch, press or rub the display and covers with abrasive cleaning compounds, instruments, brushes, rough surface materials, or bring them into contact with anything that could scratch the display or the covers.
- Do not use petroleum based or acetones solutions, or other harsh solvents, to clean the MDC-2.

Cables

Do not autoclave the cables. Wipe the cables using a mild detergent solution. Never submerge the cables in any liquid or allow liquids to enter the electrical connections.

Preventive Maintenance

Always check the device for irregularities and:

- Make sure cables are intact.
- Device is on a flat surface
- Power light is ON

NOTE: There are no user serviceable items contained in the MDC-2 and MDA-1.

